Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	**WC Docket No. 05-196**
E911 Requirements for IP-Enabled Service Providers	)	

REPLY COMMENTS OF TELECOMMUNICATION SYSTEMS, INC.

H. Russell Frisby, Jr.
Marc S. Martin
KIRKPATRICK & LOCKHART NICHOLSON GRAHAM LLP
1800 Massachusetts Avenue, NW
Suite 200
Washington, DC 20036-1221
(202) 778-9000

Counsel for TeleCommunication Systems, Inc.

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TeleCommunication Systems, Inc. ("TCS"), by its attorneys, respectfully submits its reply comments in the above-referenced proceeding.

TCS has been a long-time participant in various efforts to promote the safe and ubiquitous deployment of E911 service. In its initial comments in this proceeding ("TCS Comments"), TCS indicated its strong support for the Federal Communications Commission ("FCC" or "Commission") decision to require Interconnected VoIP Service Providers ("IVSPs") to supply E911 capabilities to all of their customers. In order to encourage the open and flexible development of innovative VoIP E911 technology, TCS urged the Commission to make certain that its VoIP E911 rules were generally applicable to all VoIP services used to terminate calls on the public switched telephone network ("PSTN"), to promote innovation by ensuring that interconnections to the PSTN network are technically neutral, and to provide proper guidance through the adoption of appropriate performance metrics and technical guidelines.

TCS's overall position was generally supported by many of the commenting parties, e.g.: Association of Public-Safety Communications Officials International, Inc. ("APCO"), Boulder Regional Emergency Telephone Service Authority ("BRETSA"), National Emergency Number Association ("NENA"), National Telecommunications Cooperative Association ("NTCA"), New Jersey Board of Public Utilities ("NJBPU"), Qwest Communications Corp.("Qwest"), RNK

Telecom ("RNK"), Texas Commission on State Emergency Communications ("TX-CSEC"), Texas Office of Public Utility Counsel ("TOPUC"), and Vonage.

In these reply comments, TCS seeks to address: (1) the importance of making certain that, to the extent possible, the Commission's rules apply to any communications device from which a user would reasonably expect to call Emergency Services (i.e., 9-1-1) for assistance, (2) the local nature and usage of a Master Street Address Guide ("MSAG") and support for the Commission's current position of neutrality regarding mandating MSAG usage, (3) the importance of continued Commission oversight over IVSP interconnection with the PSTN so as to ensure technological neutrality and ubiquity of service, and (4) the fact that the Commission should not adopt a deadline for the implementation of new autolocation technology but should instead establish general guidelines and performance metrics.

I. THE COMMISSION'S RULES SHOULD APPLY TO ANY VOIP SERVICE OFFERING WHICH PROVIDES TERMINATION CAPABILITIES TO THE PSTN INCLUDING SOFT PHONES

The TCS Comments noted that consumer utilization of soft phones and other alternatives to traditional telephony is likely to see an extremely rapid increase within the next decade, and that any rules now adopted by the Commission should attempt to address this eventuality, because in an emergency, users should not have to question whether the device or method which they routinely use to terminate calls on the PSTN is an appropriate device to utilize when in an emergency situation. *TCS Comments*, pages 4, 7, 8.

TCS' position was supported by many, including many public safety groups. On pages 1-2 of its comments, TOPUC noted that the Commission "should extend E911 obligations to all VoIP services where a consumer views themselves as interconnected to the PSTN, includ[ing] those services that enable users to terminate calls to the PSTN." *TOPUC Comments*, pages 1-2.

Similarly, TX-CSEC indicated in its comments that "obligations should be consistent with customer expectations regarding the service." *TX-CSEC Comments*, page 3. NENA pointed out that "all devices or services which can send calls to the PSTN [should] have E911 obligations," *NENA Comments*, page 3, and BRETSA noted that "IVSP E911 rules should be extended to all real-time, two-way voice services which can terminate calls on the PSTN." *BRETSA Comments*, page 5.

The NTCA commented that "VoIP providers who enable their subscribers to terminate calls to the PSTN should comply with the E911 requirements, even if their users cannot receive calls that originate on the PSTN," *NTCA Comments*, page 3, while RNK specifically noted that "interconnected VoIP services not fully connected to the PSTN, such as services offering one-way outbound calling services to the PSTN, should also offer E911 services." *RNK Comments*, page 9.

It is not surprising that those most clearly responsible for responding to an emergency call would ask the Commission to extend the requirements to address any communications device that terminates to a PSTN – they daily see how end users adopt and adapt technology, sometimes in ways unanticipated by the technology provider and, unfortunately, in ways that can result in disastrous consequences. Gregory L. Rhode, Director of the E9-1-1 Institute, recently testified before a Senate Hearing on proposed VoIP E9-1-1 legislation and criticized the Commission for allowing VoIP voice services "to be sold to the public without access to emergency numbers." *E9-1-1Institute News Release*, page 1 (September 1, 2005). TCS applauds the Commission's current proactive decision and believes that the Commission has the opportunity to make sure that the new and emerging technologies, if they can terminate calls to the PSTN, are E911 capable.

There were also commenters that disagreed: the comments offered by The Center for Democracy et al., Cisco Systems, GlowPoint, Inc. ("Glowpoint"), Information Technology Industry Council ("ITIC"), Skype, United Online, and The Voice of the Net Coalition ("The VON Coalition") indicated disagreement with the expansion of regulations into new and emerging technologies, for a variety of reasons. A sampling of the reasons why commenters opposed the application of regulations to emerging technologies follows:

Skype argued that since soft phones do not transmit automatic number identification ("ANI"), it is not technically feasible for them to transmit the necessary E911 data.[1] They further noted that because Skype's customer interface provides the opportunity to inform consumers about the limitations of the service, users have made a knowing choice regarding E911 services, and understand the implications. The Center for Democracy, in its Comments, opposed requiring E911 functionality from soft phone providers, because it believes that the Commission should "encourage", but not "require" VoIP providers to provide E911 service—the reasoning being that emergency-focused mandates would have the result of "hindering the development of valuable non-emergency technology." *Center Comments*, page 3.

The VON Coalition, like Skype, noted that in cases where customers can make, but not receive, PSTN calls, customers are not provided telephone numbers, making it difficult, if not impossible, to offer E911. *VON Coalition Comments*, page 16. The VON Coalition also argued that "VoIP customers are sophisticated, early adopters of state-of-the-art technology and do not purchase such limited services as replacements for standard telephone service and, accordingly, would not reasonably expect to have E9-1-1 services." *Id*.

[1] Skype notes in a footnote on page 6 that "Without transmission of ANI information, compliance with existing E911 rules is impossible." (discussing those consumers who purchase SkypeOut but not SkypeIN, as no numbering resources are used) *Skype Comments*, page 6.

TCS believes that these arguments, and the analogies advanced, have some merit with regards to fulfilling the full requirements of the Order but should not exempt these devices entirely from E9-1-1 responsibilities. The situation at issue is comparable to that faced by carriers and public safety answering points ("PSAPs") in connection with wireless non-initialized phones. Such phones do not have associated call back numbers, yet the Commission correctly requested that such phones have the ability to place E9-1-1 calls arguing that the safety of the end user overrides the lack of call back number information. Calls from such phones are still required to access Public Safety via Selective Routers, but Call Back Number information need not be provided under such circumstances. TCS recommends that if a reasonable means of providing a Call Back Number can be devised[2], then the Call Back Number should be required. In any event, calls originated by soft phones should be routed via the selective router, just like wireless non-initialized phones. In this fashion, the PSAPs would at least receive location and carrier information. However, TCS recognizes that soft phone users may be highly "nomadic" and thus would require techniques that easily or automatically register their location information. The Commission's current Order appears to be predicated on the belief that a user's location could be easily obtained and that there are currently methods by which such location information can be automatically transmitted to PSAPs. The techniques by which highly nomadic users would easily or automatically register location information must still be investigated and developed, and TCS recommends that the Commission take this into account when determining the time frames in which extensions to the current Order would apply.

Glowpoint, in its comments, opposed requiring E911 functionality from IP-enabled video conferencing providers, because Glowpoint believed that such "services are readily

[2] TCS has devised methods that could be used by the industry to dynamically assign a Call Back Number under such circumstances.

distinguishable from traditional telephone services and end users have no expectations that they are available for emergency calls." *Glowpoint Comments*, page 1.

TCS respectfully submits that the Commission has already attempted to address such expectations by only requiring E9-1-1 services from VSPs that are interconnected to the PSTN. Should such video conferencing services ONLY work in conjunction with other services not interconnected to the PSTN, then they are already exempt. However, if an IP-based video conferencing solution allows interconnection to IP-based video phones or standard telephones interconnected to the PSTN, then subscribers to such services would have a natural belief that such a service could also connect to the PSTN for placing an outbound call in the case of an emergency.

TCS also notes that while some services and customers may be sufficiently "sophisticated" to determine when E911 services will be available and when they will not, the consequences of mistaken expectations regarding 911 services have already been shown to be too severe not to err on the side of caution.

II. THE COMMISSION SHOULD NOT MANDATE THE ADOPTION OF A NATIONWIDE MASTER STREET ADDRESS GUIDE

In the TCS Comments, it was noted that the Commission should issue guidance regarding the need for a nationwide Master Street Address Guide, but continue to refrain from mandating the provision of MSAG validated addresses while the industry attempts to find a more flexible solution, one which would have the potential to expand across a variety of technological platforms.

Again, some commenters disagreed, believing that the MSAG standard should be required now. One such commenter was Intrado, which noted in their comments that the

"Commission should clarify that MSAG-validated addresses should be provided to PSAPs." *Intrado Comments*, page 1.

TCS was not persuaded by these commenters and believes that the FCC's current approach to MSAG, where it has not required that MSAG addressing should be provided, is the most prudent approach. We have discovered that this issue has a highly local perspective and would likely not be best served by a Federal oversight. Some jurisdictions are comfortable or even prefer civic addresses while others demand MSAG-validated addresses and are willing to provide the foundational information that allows the IVSPs and their third parties to provide it. Further, we estimate that over 35% of all existing 9-1-1 calls coming into PSAPs today do not provide MSAG-valid addresses because they are providing Phase II wireless information instead. Thus, the industry in general must investigate future solutions concerning how location information should be delivered to PSAPs and should work in conjunction with PSAPs to resolve this issue for future generations.

III. THE FCC SHOULD REJECT ARGUMENTS THAT NO FURTHER OVERSIGHT OVER IVSP INTERCONNECTION IS NEEDED

Parties such as SBC Communications ("SBC") and the U.S. Telecom Association ("USTA") argue in their comments that no further oversight over IVSP interconnection is needed. USTA's comments indicate agreement with the FCC's idea that it should not regulate the manner in which LECs offer E911 service to IVSPs. *USTA Comments*, pages 3-4. Flexibility is given as one support for this position, along with the idea that a "one-size-fits-all regulatory approach is inefficient." *Id*.

SBC notes that there is no need to impose restrictive obligations because LECs "have announced a host of [E911] service offerings" and FCC action would stifle commercial negotiations—such as those which have resulted in an agreement between SBC and Vonage.

SBC Comments, page 17. In response, TCS submits that these arguments fail to distinguish between the imposition of "undue" regulation that would only serve to stifle technological development and the provision of the guidance necessary in order to speed the deployment of VoIP E911 service. The former should be avoided by the Commission while the latter should be embraced.

As TCS has previously indicated, the Commission must be guided by the fundamental principle that the network should be neutral with regard to interconnection and the type of technology used to provide VoIP E911. *TCS Comments*, page 2. This neutrality is critical in order to enable IVSPs and CLECs to access the ILEC infrastructure that supports PSAPs in a manner that permits the free selection of VoIP E911 technical solutions. Much work still remains before this goal can be achieved. A variety of IVSP interconnection and pricing issues have not been resolved. Moreover, a number of entities, not just the LECs, are faced with the conflict of being both provider and competitor at the same time.

Consequently, general Commission oversight and regulations establishing performance metrics and standards as well as LEC progress reporting requirements would not result in the imposition of an onerous regulatory scheme. Instead, they would be in the public interest. After all, it must be remembered that the implementation of wireless E911 has demonstrated that problems can be expected. Performance metrics and standards would provide necessary guidance for industry and public safety officials. Likewise, reports would provide a means by which to monitor LEC compliance and provide incentives to ensure the same. This is the best, and least onerous, method by which to ensure technological neutrality, ubiquity of service and prompt deployment of VoIP E911.

TCS would like to emphasize one particular checkpoint which it believes is of paramount importance: the FCC should mandate time frames for updating ALI databases. Without such a mandate, there will be no consistency in the manner in which ALI records are updated, and this inconsistency will cause tremendous problems for PSAPs.

IV. THE COMMISSION SHOULD NOT IMPOSE A DEADLINE FOR THE IMPLEMENTATION OF AUTOLOCATION TECHNOLOGY

As was discussed in the Commission's First Report and Order and Notice of Proposed Rulemaking (*IP-Enabled Services*, WC Docket No. 04-36, *E-911 Requirements for IP-Enabled Service Providers*, WC Docket No. 05-196, First Report and Order and Notice of Proposed Rulemaking, FCC 05-116 (rel. June 3, 2005) (*NPRM*)), there is disagreement as to whether the Commission should impose a deadline for the implementation of autolocation technology. This disagreement is reflected in the comments to the NPRM.

While the APCO supports the Commission's June 1, 2006 deadline for all terminal adapters to possess the ability to provide location information (the "June 2006 Deadline"), *APCO Comments*, page 2, there is generally uniform industry agreement that such a deadline is impractical and would hamper innovation.

The VON Coalition notes that a technological mandate with respect to the Commission's June 2006 Deadline would impede industry progress and is otherwise unrealistic, while SBC believes that the Commission should not impose additional reporting requirements on VoIP providers at this time and specifically should not mandate adoption by June 1, 2006. *VON Comments*, page 12.

Cisco Systems cites the significant strides that have been made by private industry and standard-setting in developing automatic location technology, and believes that the Commission should continue to encourage industry innovation by refraining from "establish[ing] specific

rules or technological mandates." *Cisco Comments*, page 8. Further, Cisco Systems notes that the Commission's June 1, 2006 automatic geographic location sensing deadline is unrealistic and "would hinder rather than hasten the development of appropriate solutions," *Id*. page 10.

TCS agrees with this industry-wide sentiment and opposes the imposition of a fixed deadline for mandating new technology. Although competition and open standards will drive a variety of providers to develop appropriate technology in a rapid fashion, no one can accurately predict when new technology will feasibly meet the needs of VoIP E911, and the imposition of an artificial deadline may result in stopgap, rather than comprehensive measures to solve this problem.

TCS believes that the best way to ensure progress in providing autolocation technology lies in establishing strong requirements rather than artificial deadlines. TCS continues to advocate the establishment of performance metrics that would guide the industry as it creates and implements autolocation technologies. Such metrics should require a particular percentage of location accuracy, a maximum time lapse for obtaining the location information and providing it to Public Safety, and the ability for Public Safety to request updates to a caller's location during the middle of a call (typically called a "re-bid"). TCS believes that such requirements continue to be ill-defined and mandating that devices provide their location without clarifying some of these parameters would be premature.

Finally, TCS would like to emphasize the fact that VoIP E911 presents the FCC with a unique opportunity to promote competition and innovation while protecting consumers. If the FCC requires the application of standards across the VoIP industry, including soft phones, then the number of consumers who will be protected and stakeholders with an interest in a solution will be increased. Similarly, if the FCC provides minimal oversight and guideposts for the

implementation of VoIP E911 while guaranteeing open standards and access to interconnections, then the FCC will maximize the number of potential problem solvers who will be focused on finding an efficient and flexible solution to the problems confronting VoIP E911.

Kirkpatrick & Lockhart Nicholson Graham LLP

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By: _____

H. Russell Frisby, Jr.
Marc S. Martin
Attorneys for TeleCommunication Systems, Inc.